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AGRICULTURAL MEMORANDUM NO. 878

WORK DAYS AVAILABLE FOR THE SILAGE MAIZE HARVEST

by M N Hough

Maize is a crop which is harvested late in the year, possibly in October or November after a cool summer if 30% dry matter silage is being aimed for. The purpose of this note is to show how the potential time available for harvest varies from year to year and across the UK.

Harvest Day Criteria

In order to make good maize silage a dry matter content above about 25% is essential, and 30% is recommended as being better than a lower figure if the loss of material and pollution caused by effluent from the silage are to be reduced to acceptable levels. It is known that about 2,500 Ontario Units are required from sowing to 30% whole crop dry matter, and so before any harvest can occur this number of Ontario Units must have been accumulated.

It is not known precisely what conditions prevent a day from being suitable for harvest, but it is assumed that a soaked standing crop will not be harvested. Maize crops can intercept about 0.5 mm water which is enough to lower the DM %age for a 10 t/ha DM crop from 30% to 26.1%. Therefore it is assumed that days which have 0.5 mm or more of rain are not suitable harvest days. Also by the end of November the plants will probably have been frosted at least once. Freezing kills maize plants, and although in itself this is not serious if the crop has reached maximum dry weight, it does mean that fungi can enter the wounds caused by freezing and the plants start to disintegrate and get blown away, causing losses of dry matter. In addition the soil is usually close to field capacity by early December. Because of this the month of December and those which follow will not be regarded as ideal harvest months.

For the purpose of this memorandum the days suitable for harvesting silage maize are those days between the date that 2,500 Ontario Units are accumulated, (from an assumed sowing on May 1st) to the end of November, which have less than 0.5 mm of rain.

The results are shown in the tables. 37 Stations have been used to show the variation across the country, and for most of these the period used is 1959 to 1977. The stations are grouped approximately into ADAS Regions, and for each station is given the median number of harvest days and the number of years in ten that ten or less harvest days were recorded. Median values tend to be highest in the south and east and decrease to the west (due to fewer dry days) and to the north (due to cooler summers). The best years in this sample were 1959 and 1964, which both had a warm summer and a dry autumn, but 1976 had less than the median number of harvest days in many places because of the wet autumn. The decrease in harvest days in the north is quite sudden - compare Ringway with Kirkham and Hull with Askham Bryan. Even in the better areas of the south and east the number of harvest days has ranged from near 50 days to zero within the last 20 years.

Meteorological Office, Harrogate

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FH23

	MEDIAN	YEARS IN 10 BELOW 11 DAYS
Yorks/Lancs		
Ringway	25	2.0
Kirkham	8	5.5
Hull	28	0.0
Askham Bryan	16	3.5
Finningley	30	1.5
West Midlands		
Shawbury	16	3.5
Elmdon	28	3.0
Preston Wynne	23	3.5
Wellesbourne	30	2.5
East Midlands		
Sutton Bonington	25	3.0
Wittering	30	2.0
Waddington	28	3.0
Wales		
Valley	19	2.5
Aberporth	4	6.5
Gogerddan	13	3.5
Newport (Gwent)	27	2.0
Hawarden Bridge	28	1.0
Aber	16	2.0
South West		
Rosewarne	20	2.5
Ellbridge	21	2.5
Filton	31	0.5
Cannington	32	1.0
Starcross	32	1.0
Hartland Pt.	13	3.0
Lyneham	24	3.0

	MEDIAN	YEARS IN 10 BELOW 11 DAYS
Eastern		
Writtle	32	0.5
Terrington	25	1.5
Burlingham (1959-72)	21	0.5
Cambridge NIAB	35	0.5
South East		
Wye	33	1.5
Martyr Worthy	29	2.0
Everton	30	0.5
E. Malling	34	0.5
Fernhurst	28	1.5
Oxford	36	0
Hurley	30	0.5